

High Power Infrared LED EAIST3045A1



Features

- Small package with high efficiency
- Peak wavelength $\lambda_p = 850\text{nm}$
- Soldering methods :SMT
- Thermal resistance (junction to lead): 18°C/W .
- Pb free
- The product itself will remain within RoHS compliant version.

Description

- EAIST3045A1 series is an infrared emitting diode in miniature SMD package which is molded in a water clear silicone with spherical top view lens.
- The device is spectrally matched with silicon photodiode, Phototransistor.

Applications

- CCD Camera
- Infrared applied system

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaAs	Infrared	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I _F	500	mA
Peak Forward Current *1	I _{FP}	1.0	A
Reverse Voltage	V _R	5	V
Operating Temperature	T _{opr}	-40~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Junction temperature	T _j	115	°C
Thermal resistance (junction to leadframe)	R _{th(j-L)}	18	°C/W
Power Dissipation @I _F =500mA	P _d	1	W

Notes:

*1:I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.

*2Note: We suggest that customer should add the heat sink with EAIST3045A1 to exclude the heat.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Total Radiated Power	Po	150	210	--	mW	I _F =350mA
		200	270	--		I _F =500mA
		400	500	--		I _F =1000mA
Radiant Intensity	I _E	--	65	--	mWsr	I _F =500mA
Peak Wavelength	λ _p	--	850	--	nm	I _F =500mA
Spectral Bandwidth	Δλ	--	40	--	nm	I _F =500mA
Forward Voltage	V _F	1.4	2.0	--	V	I _F =350mA
		1.6	2.2	--		I _F =500mA
Reverse Current	I _R	--	--	10	μA	V _R =5V
View Angle	2θ _{1/2}	--	130	--	deg	I _F =20mA

Bin Code List

Condition : I_F=350mA
Radiated Power

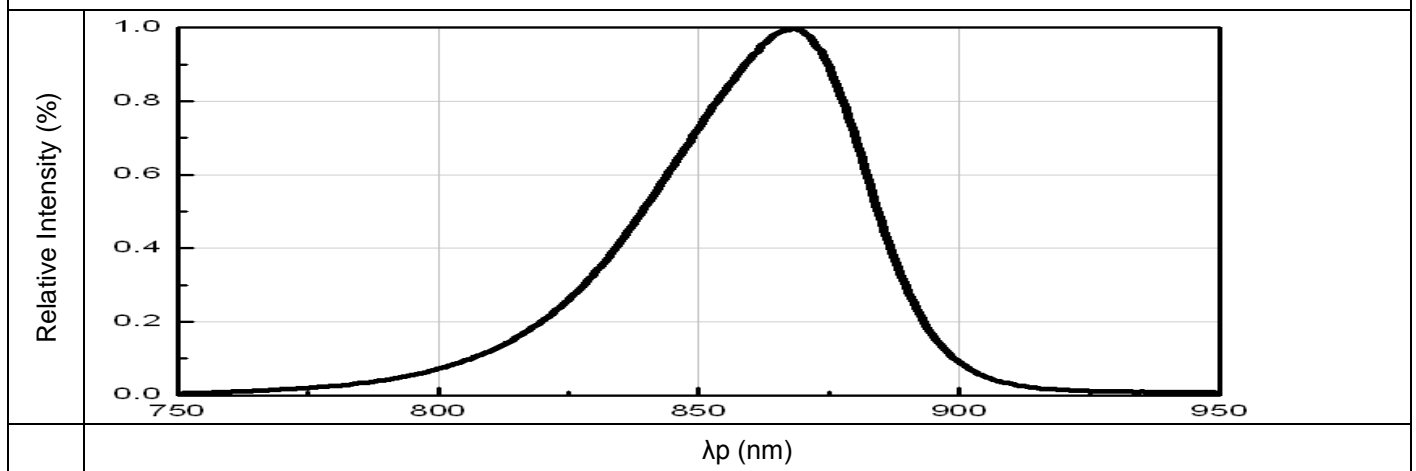
Unit : mW

Bin Number	A	B	C	D	E
Min	120	170	218	264	305
Max	190	242	295	345	385

Including test tolerance ±10%

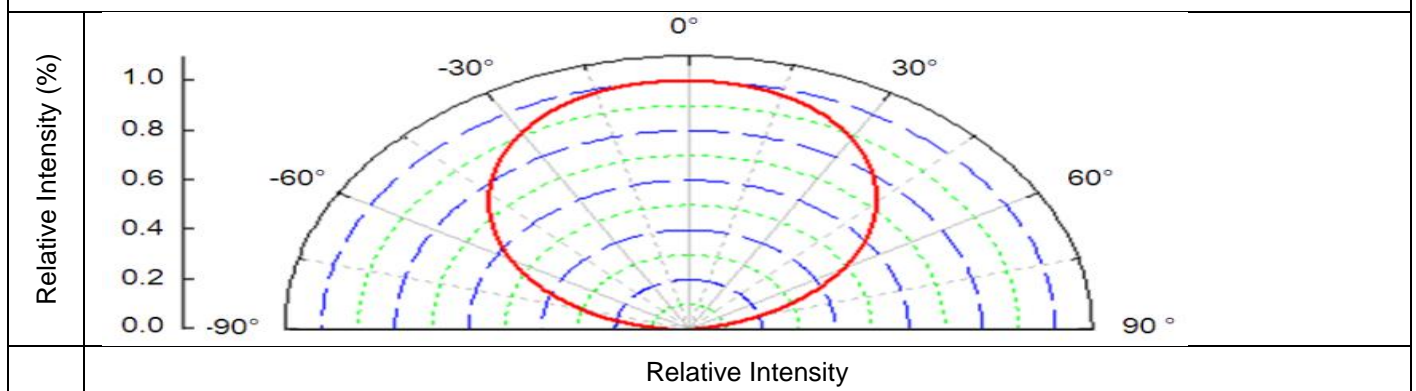
Typical Electro-Optical Characteristics Curves

Typical Curve of Spectral Distribution

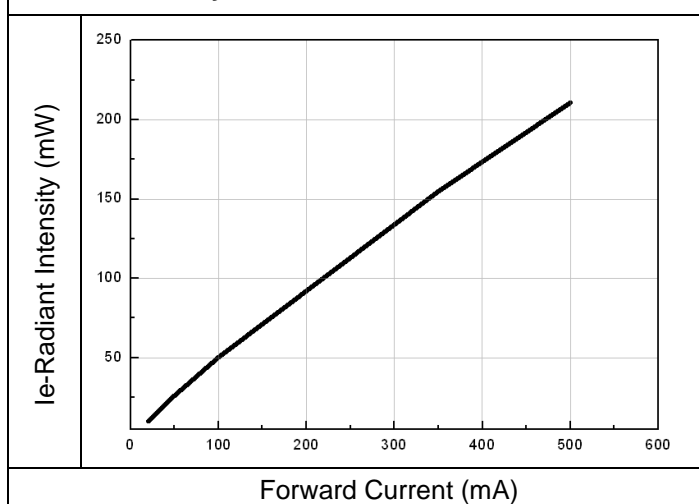


Note: $V(\lambda)$ =Standard eye response curve; $I_F = 20\text{mA}$

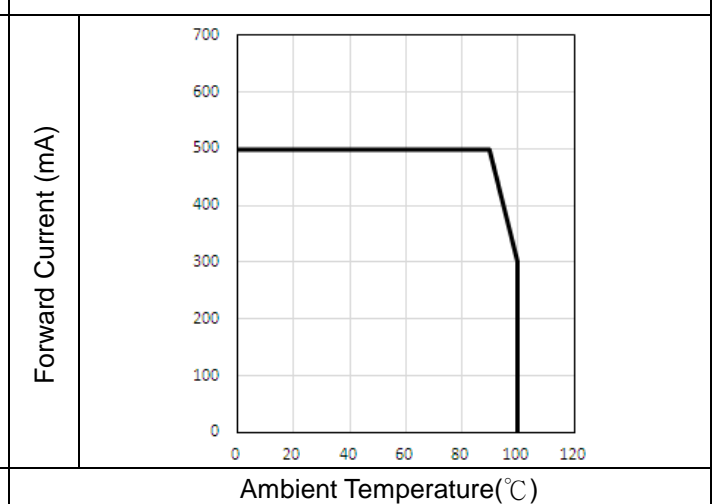
Typical Polar Radiation Pattern for Lambertian



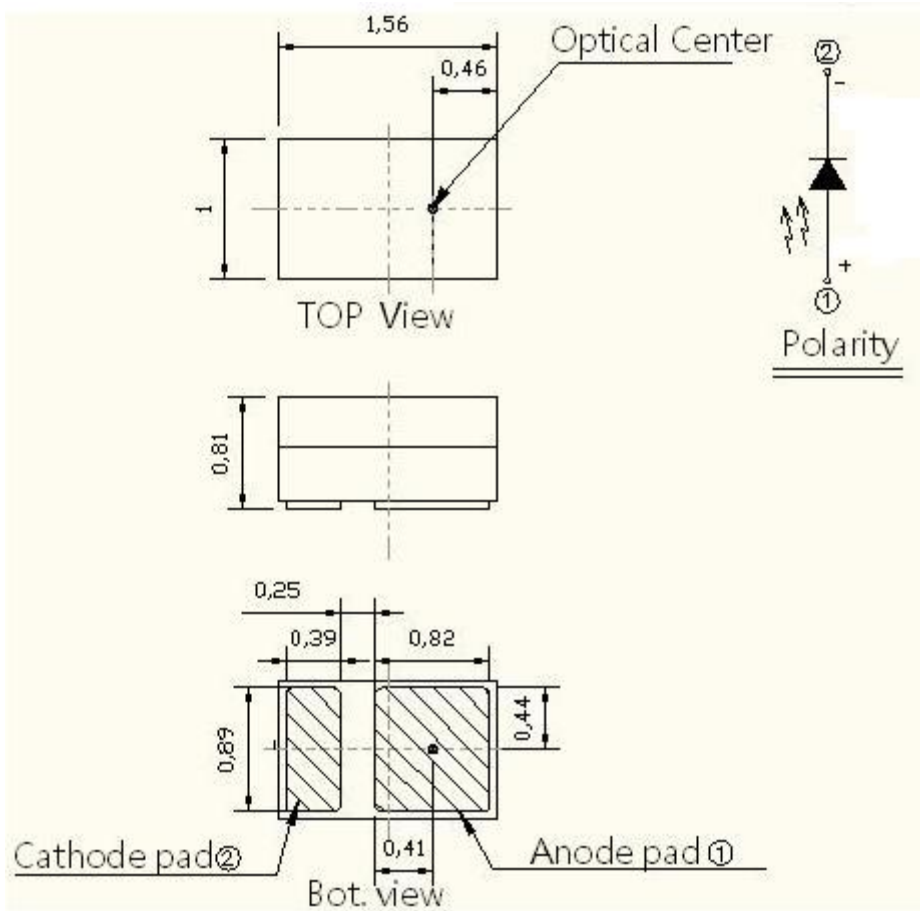
Radiant Intensity vs. Forward Current



Dominant Wavelength vs. Forward Current (Ta=25°C)



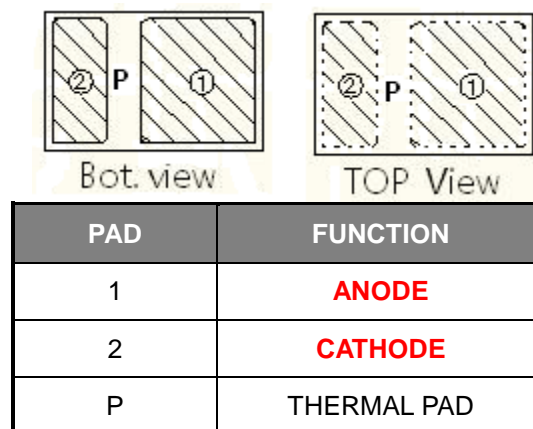
Package Dimension



Note:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ± 0.1 mm.

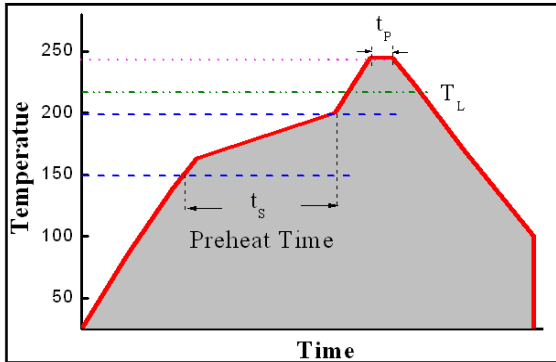
Pad Configuration



Reflow Soldering Characteristics

For Reflow Process

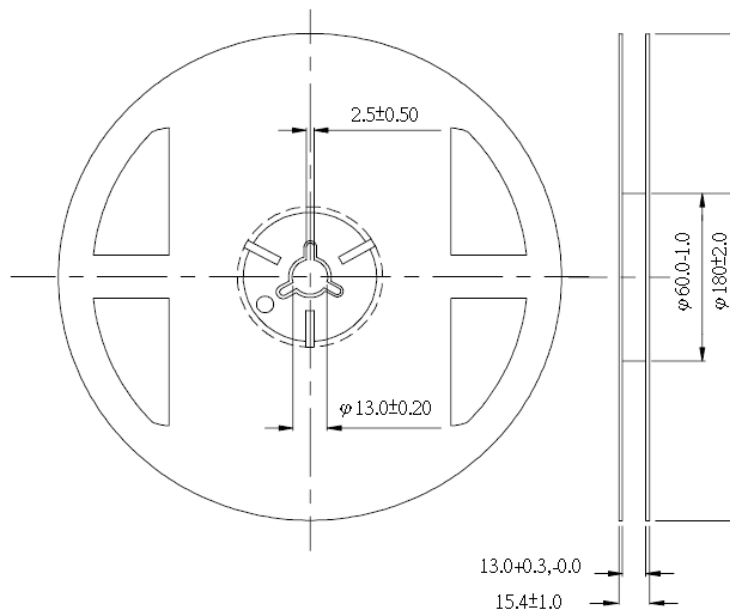
- C16 series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



Profile Feature	Lead Free Assembly
Ramp-Up Rate	2-3 °C/S
Preheat Temperature	150-200 °C
Preheat Time (t _s)	60-120 S
Liquid Temperature (T _L)	217 °C
Time maintained above T _L	60-90 S
Peak Temperature (T _P)	240±5 °C
Peak Time (t _p)	Max 20 S
Ramp-Down Rate	3-5 °C/S

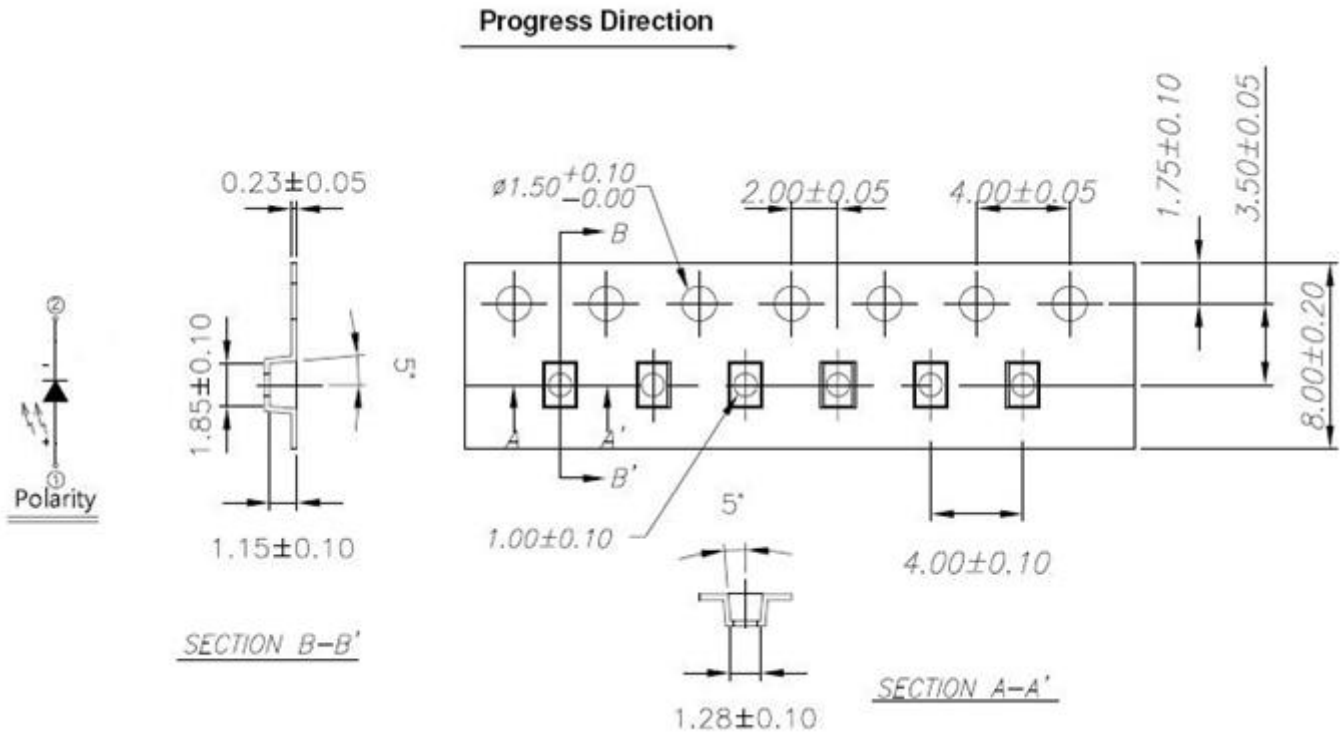
- Reflow soldering should not be done more than twice.
- In soldering process, stress on the LEDs during heating should be avoided.
- After soldering, do not bend the circuit board.

Package Dimensions



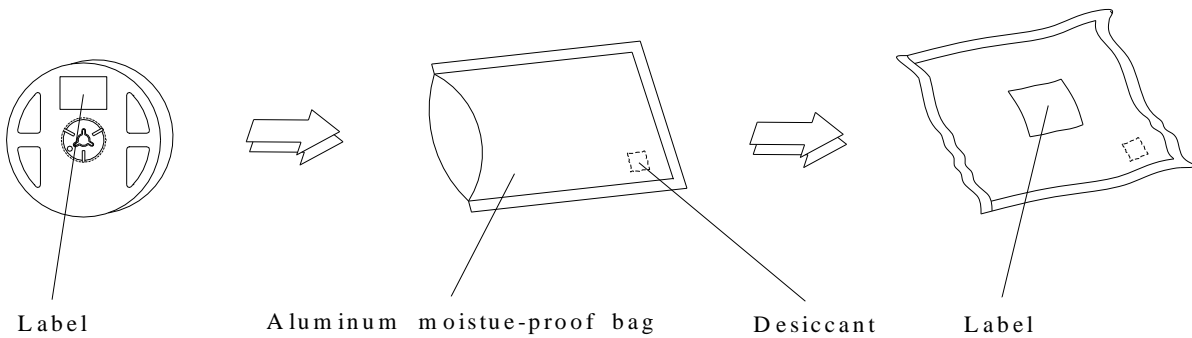
- Note: 1. Dimensions are in millimeters
2. The tolerances unless mentioned is ± 0.1 mm

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel.



- Note: 1. Dimensions are in millimeters
2. The tolerances unless mentioned is ± 0.1 mm

Moisture Resistant Packaging



Moisture Resistant Packing Materials
Label Form Specification



CPN : XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
P/N : XXXXXXXXXXXX
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
LOT NO:XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX
QTY : XXXXXXXXXXXX HUE : XXXXXXXXXXXX
CAT : XXXXXXXXXXXX REF : XXXXXXXXXXXX
REFERENCE : XXXXXXXXXXXXXXXXX
MSL-X MADE IN XXXXXX

CPN: Customer's Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: Peak Wavelength
REF: Reference
LOT No: Lot Number
MADE IN TAIWAN: Production Place



Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute
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